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reader is in the middle of a charge pulse. In the case where the sync line 900 is high, there is no confusion since the slave reader will continue to wait for a high to low transition.

In the case where the sync line is low, as at the start bit 906, it can be determined whether the low is preceding a MUX pulse 908 or is a charge cycle 910 by measuring the amount of time the sync line remains low. If the sync line remains low for more than $200\ \mu\text{s}$ ($\pm 10\%$), then it is not actually preceding a MUX pulse, but actually a charge cycle 910, in which case the interrupts are re-enabled and the hunt for the start bit resumes.

It will be also appreciated that processing routines are written such that message processing does not occur in a manner to inordinately slow down the master reader 20. Slowing down the master reader 20 is to be avoided since this will slow down the entire system of readers 20.

Pseudo-code written for storage and processing in the master and slave readers 20 that implements the synchronization of MUX 62 channels using the sync line 62 may be expressed as follows:

Sync Pseudo-Code (Slave Reader)

Start:

start timer

while sync line is high

wait

if timer goes off, go to Start

// test to see if this is the $200\ \mu\text{s}$ low. If not, we were not synced!

start timer

while sync line is low

wait

if timer had gone off then go to Start

// okay, we are synced. Time the pulse to determine the mux channel

disable interrupts

start timer

while sync line is high

wait

enable interrupts

if timer is zero go to Start